

Amplifier 1

Amplifier 2

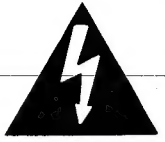
Owner's Manual / Bedienungsanleitung / Mode d'emploi

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Nakamichi



CAUTION
RISK OF ELECTRIC SHOCK. DO NOT OPEN!



CAUTION

TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE
PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO
NOT EXPOSE THIS APPLIANCE TO RAIN OR
MOISTURE.

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient the receiving antenna
- relocate this equipment with respect to the receiver
- move this equipment away from the receiver
- plug this equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems".

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Nakamichi Corporation Certifies That This Equipment Conforms to DHHS Regulations No. 21 CFR, Chapter 1, Subchapter J.

Please record the Model Number and Serial Number in the space provided below and retain these numbers. Model Number and Serial Number are located on the rear panel of the unit.

Model Number: Amplifier1/Amplifier2

Serial Number: _____

Features

■ Harmonic Time Alignment™ circuit topology

In the preamp and power amp stages, open-loop gain is designed with a high cut-off point, and local NFB (negative feedback) is used sparingly. This approach faithfully preserves the phase relationship of the music signal and distortion components, making distortion all but inaudible. Musical expression therefore is utterly natural and transparent.

■ Line amplifier stage with discrete components

The line amplifier consists only of strictly selected, high-quality parts. The open-loop gain frequency response is designed to be flat, to bring out the full potential of the Harmonic Time Alignment principle.

■ High current capability

The power transistors are amply dimensioned, yielding a peak current capability of 28 amperes (Amplifier1) or 18 amperes (Amplifier2). In addition, the large power transformer and large filtering capacitors provide the necessary muscle to drive even very low impedance speakers with ease.

■ Multi-regulated power supply

Separate transformer windings are provided for the control section and the audio signal circuitry, to prevent interference between stages. The phono stage and the line amplifier stage have dedicated local power regulators which provide stable and clean current.

■ Isolated ground principle

The phono stage and the line amplifier stage employ Nakamichi's original isolated ground design. This ensures that the ground potential always remains constant, resulting in stable signal transmission.

■ System Remote capability

The supplied remote control unit can be used to operate not only the amplifier but also other connected Nakamichi components.

E
English

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Before Use

Please read this entire manual before using the unit, and retain the manual for future reference.

Precautions

1. Take care that no liquid or foreign object enters the unit.

Never touch the unit or the power cord and plug with wet hands. If a liquid or foreign object has accidentally entered the unit, disconnect the power cord and have the unit checked by qualified service personnel.

2. Never open the unit.

Do not attempt any repairs or alterations, as this involves the danger of electric shock, can damage the unit, and will void the warranty.

3. Avoid locations where the following conditions exist:

- Direct sunlight or high temperature
- High humidity or danger of water spills
- Not enough ventilation
- High amounts of dust
- Instable surfaces

4. Caring for the exterior panels of the unit should be limited to wiping with a soft, dry cloth. Avoid using solvents or alcohol-based cleaners.

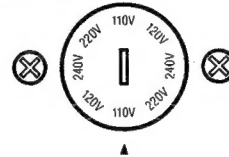
5. When not using the unit for a long time, disconnect the power plug from the AC outlet.

6. Voltage Selector (special equipment)

A special version of this unit with a voltage selector on the rear panel is sold in areas other than Australia and Europe.

If the model you have purchased is a version with voltage selector, **be sure to confirm that the voltage selector is set to the correct AC voltage used in your area. Check this before plugging the power cord into the AC outlet.** If the selector is not set correctly, change the setting so that it matches your local AC voltage rating.

Voltage Selector ▼

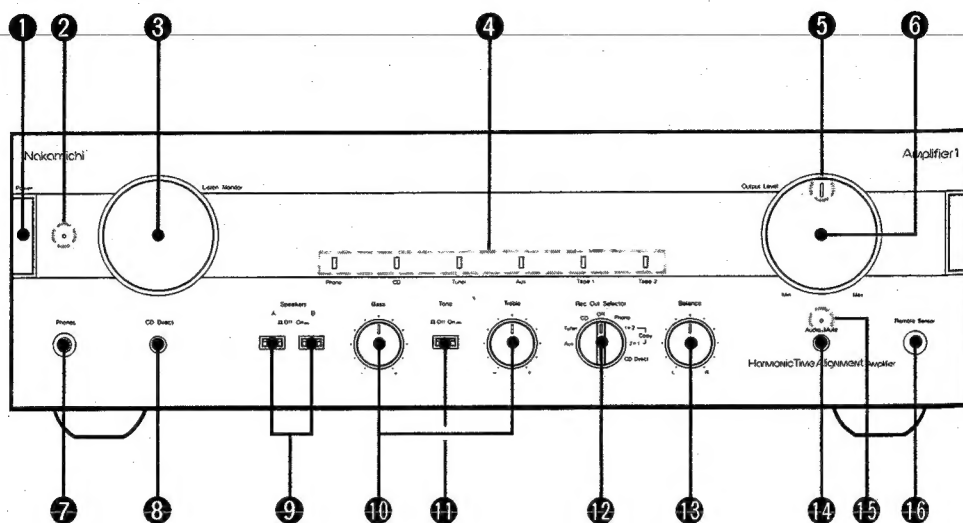


7. Do not block the ventilation openings.

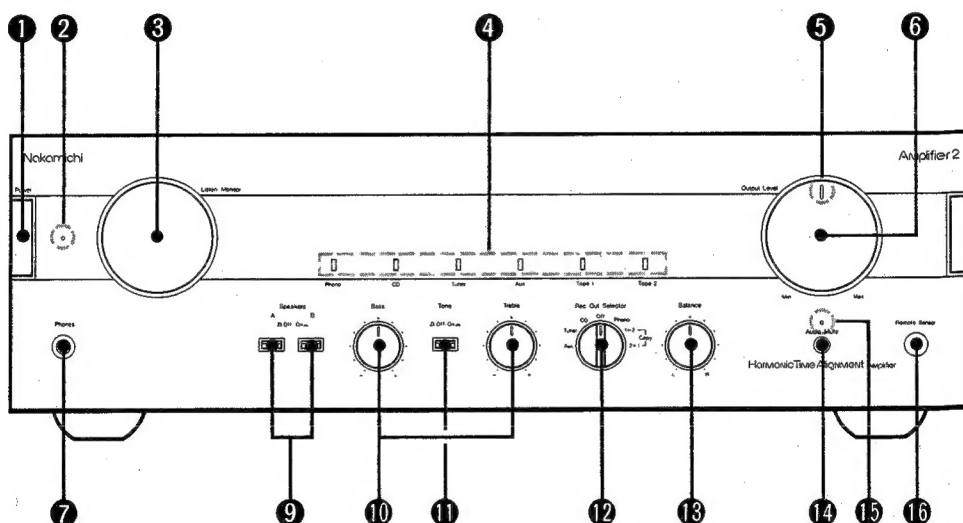
This unit can become warm during operation. To ensure proper ventilation, always leave sufficient clearance above the unit. Do not place a cloth or similar object on the amplifier and do not stack another component directly on top.

Controls

(Amplifier1)



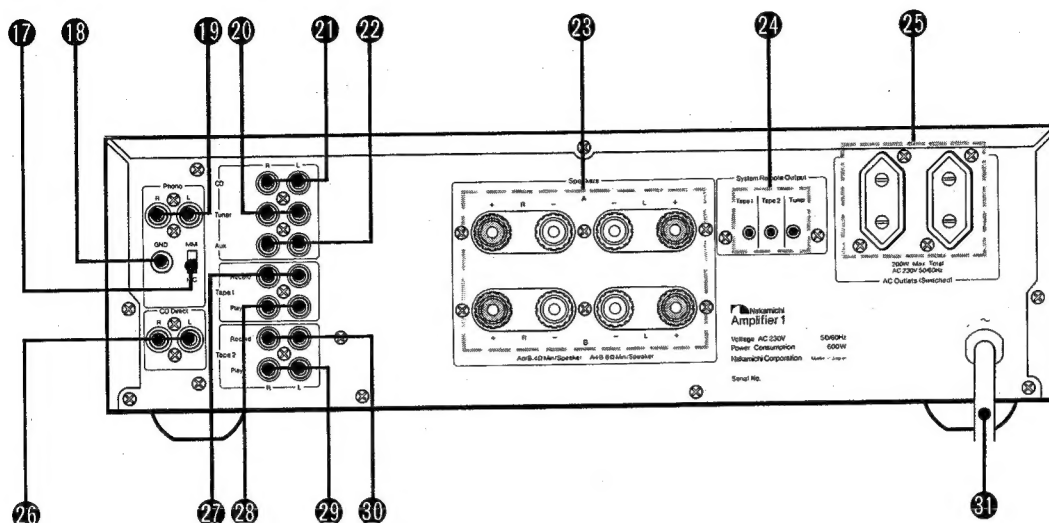
(Amplifier2)



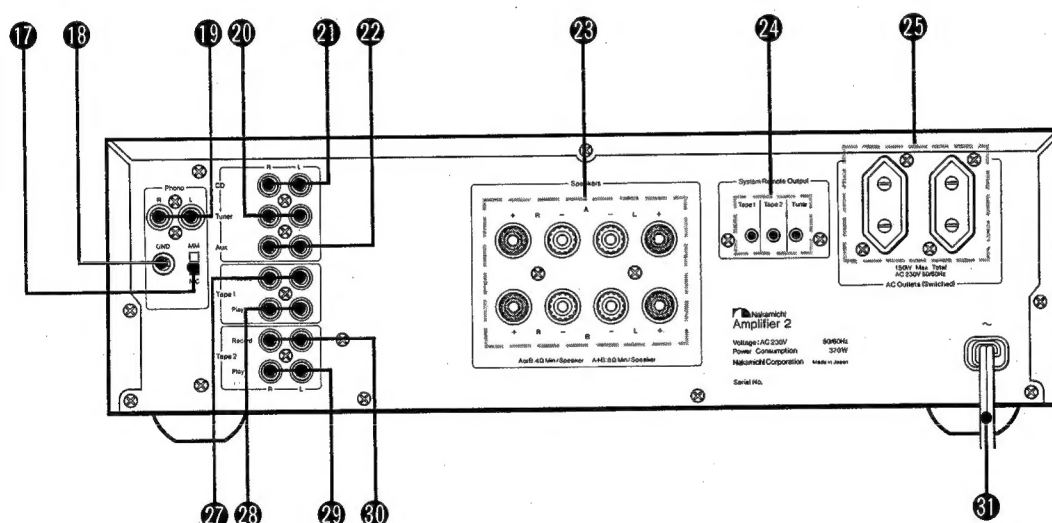
Front panel

- | | |
|---------------------------------|--------------------------------|
| ① Power switch | ⑨ Speaker selector |
| ② Power indicator | ⑩ Tone controls (Bass, Treble) |
| ③ Listen Monitor selector | ⑪ Tone On/Off switch |
| ④ Listen Monitor indicators | ⑫ Rec Out selector |
| ⑤ Volume indicator | ⑬ Balance control |
| ⑥ Volume control | ⑭ Audio Mute button |
| ⑦ Headphone jack | ⑮ Audio Mute indicator |
| ⑧ CD Direct switch (Amplifier1) | ⑯ Remote control sensor |

(Amplifier1)



(Amplifier2)

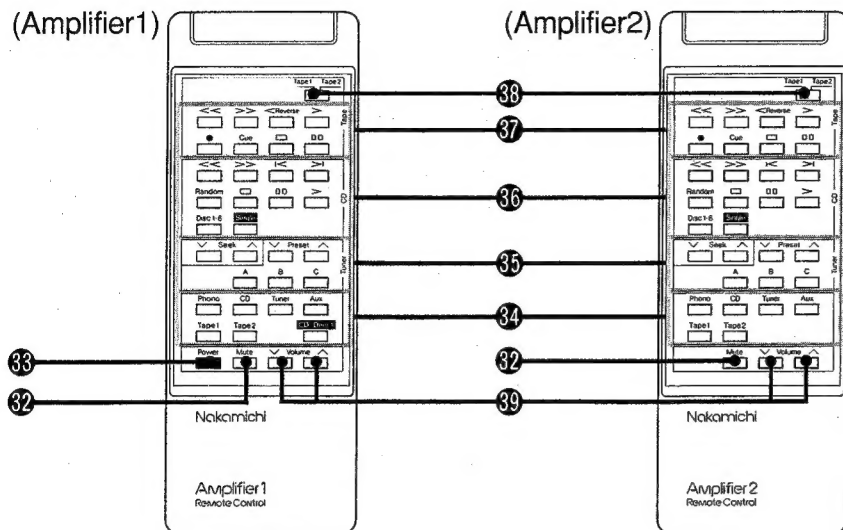


The shape of the convenience AC outlets depends on the country of sale.

Rear panel

- | | |
|-------------------------------|---------------------------------|
| 17 Cartridge type selector | 25 AC outlets (switched) |
| 18 GND terminal | 26 CD Direct input (Amplifier1) |
| 19 Phono input | 27 Tape 1 output |
| 20 Tuner input | 28 Tape 1 input |
| 21 CD input | 29 Tape 2 input |
| 22 Aux input | 30 Tape 2 output |
| 23 Speaker output terminals | 31 Power cord |
| 24 System Remote output jacks | |

Remote control unit



- 32 Audio Mute button
- 33 Power button (Amplifier1)
- 34 Listen Monitor selector buttons
- 35 Tuner control buttons
- 36 CD player control buttons
- 37 Tape deck control buttons
- 38 Tape deck selector
- 39 ∇/Δ Volume control buttons

Remote Control Unit

The supplied remote control unit allows operation of the amplifier and other Nakamichi components from any

- ➡ To operate a tape deck, set the tape deck selector on the remote control unit to "Tape 1" or "Tape 2", depending on which System Remote output jack (on the amplifier's rear panel) was used.
- ➡ Operation of a tape deck, CD player, tuner etc. is essentially the same as the corresponding buttons on the respective component. For details, please refer to the owner's manual of the component.

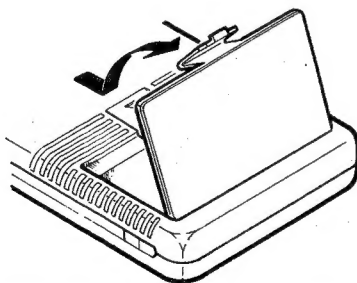
convenient location. To use the remote control, set the Power switch of the amplifier to On.

Batteries

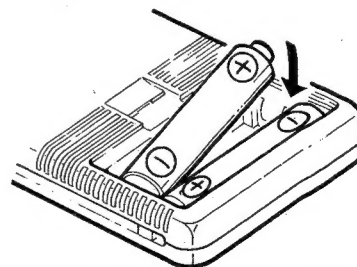
Remove the cover of the battery compartment as shown in the illustration and insert the supplied two R6 batteries (size AA) into the compartment, taking care to observe correct polarity.

When the batteries are nearing exhaustion, the effective range of the remote control decreases or the remote control may fail to operate. In this case, replace both batteries with fresh ones.

Removing the battery compartment cover



Inserting the batteries



Notes:

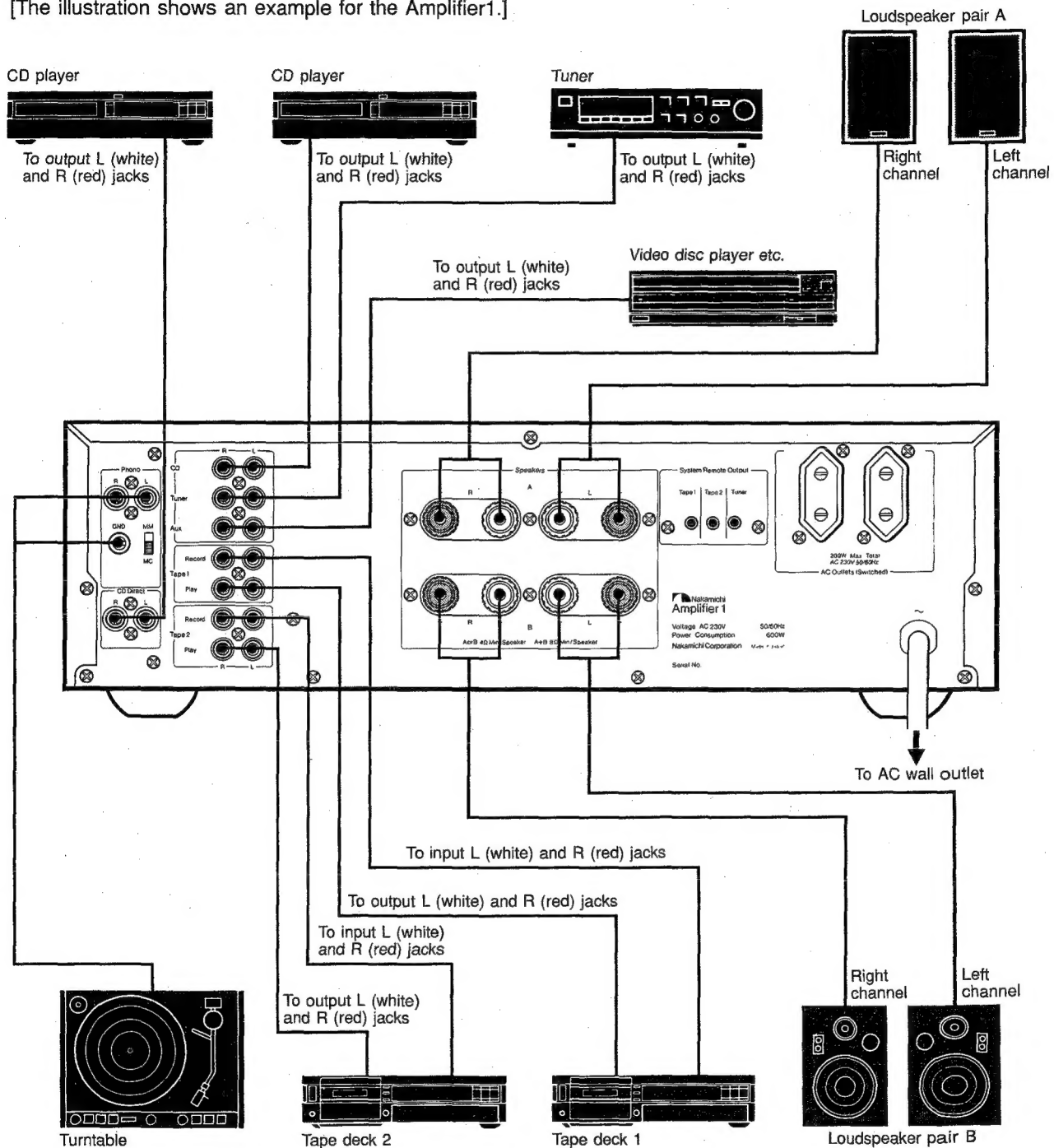
- ➡ Do not use a mixture of old and new batteries, and make sure that both batteries are of the same type.
- ➡ Only batteries specially designed and clearly marked as such are rechargeable. Carefully read and observe the instructions printed on the batteries.

- ➡ To prevent damage caused by possible battery leakage, remove the batteries from the remote control unit if it is not to be used for an extended period of time.
- ➡ Never dismantle batteries or dispose of them in fire, as they may explode. Dispose of batteries only in an appropriate way as indicated by your community.

Connections

Set the power switches of the amplifier and all other components to OFF before making connections.
Be careful not to mix up left and right channels.

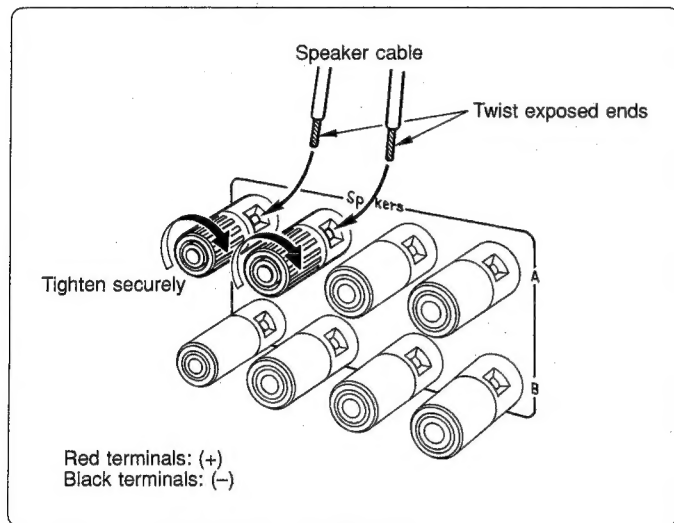
[The illustration shows an example for the Amplifier1.]



Speaker Connections

Connect the left-side loudspeaker to the left-channel speaker terminals and the right-side loudspeaker to the right-channel speaker terminals of the amplifier, taking care to observe correct (+) and (-) polarity. If the polarity

of one speaker is reversed, the speakers will be out of phase, causing a loss in bass response and unstable, irregular stereo imaging. Double-check to make sure that both speakers have the same polarity.



- Use high-quality, heavy-gauge speaker cable with low resistance, designed specially for audio applications. Thin cable with high resistance may impair sound quality and prevent the amplifier from delivering its full potential.
- The speaker cables for both channels should be approximately equal in length, as a marked difference can result in improper left/right balance.
- Pay attention to the power handling capability of connected loudspeakers. If it is lower than the maximum rated output of this amplifier and the amplifier is driven close to its full capacity, the speakers may be damaged.
- The high-current design of this amplifier permits stable operation over a fairly wide range of speaker load impedances. However, if two pairs of speakers are driven in parallel, do not turn up the volume to excessive levels.

Use of the CD Direct Input (Amplifier1)

This pair of input jacks is provided to allow music reproduction with utmost purity. To listen to a CD player connected to the CD Direct input, press the CD Direct switch on the amplifier's front panel (switch indicator lights).

The signal from the CD Direct input bypasses the Listen Monitor and balance control circuits. The right/left balance can therefore not be adjusted when this input is used.

Use of the Convenience Power Outlets

The AC outlets provided on the rear panel are switched together with the power on/off condition of the amplifier. They can be used to power other audio components in the system. The total power consumption of equipment connected to these outlets must not exceed 200 watts (Amplifier1), 150 watts (Amplifier2).

- **Never connect any household appliances with high current requirements to these outlets.**
- TV sets, monitors, etc. often have a high turn-on current, even if they are rated for lower power consumption. **Never connect such equipment to these outlets.**

Protection Circuits

To guard against possible damage to the amplifier and connected equipment, this unit incorporates separate circuits for the left and right channel which constantly monitor operating conditions. If the internal temperature of the unit rises to excessive levels, if there was a short-circuit in the speaker leads, or if DC current has leaked into the speaker output, a relay cuts off the output in both channels.

In this condition, the power supply is not turned off, and the power indicator blinks. When regular conditions are restored, the amplifier automatically reverts to normal operation.

② The above mentioned cases may result from unsuitable connections, improper installation (restricted air flow prevents heat exchange), or abnormal use (such as driving very low-impedance speakers at high levels for an extended period). If the protection circuits are activated frequently, first turn down the volume control, then switch off the power and check connections of all components as well as installation conditions. If these checks reveal no particular problem and the protection circuit is activated again after the amplifier was switched on, contact an authorized service station.

System Remote Control

The System Remote jacks on the rear panel of this unit can be used to connect up to two Nakamichi tape decks equipped for System Remote control (all models except the series 480) and a tuner with a System Remote input.

The supplied remote control unit of the amplifier can then be used to control most functions of the other components as well. For this connection, use the system remote cable supplied with the amplifier.

● Tape Deck Operation Chart

Remote control button Tape deck model	<<	>>	< Reverse	>	●	Cue	□	□□
CR-7	Rewind	Fast-forward	—	Play	Record standby*	Fast-forward	Stop	Pause
CR-5	"	"	—	"	"	"	"	"
CR-4/CR-3/CR-2	"	"	—	"	"	"	"	"
CassetteDeck 1/2	"	"	—	"	"	—	"	"
1000 (DAT)	"	"	—	"	"	—	"	"
1000ZXL	"	"	—	"	Record*	Cueing	"	"
DRAGON	"	"	Reverse play	Forward play	"	"	"	"
RX-505	"	"	Switch tape direction	Play	"	"	"	"
RX-303	"	"	"	"	"	Fast-forward	"	"
RX-202 (No. 50871~)	"	"	"	"	Record standby	Stop	"	"
BX-300	"	"	—	"	"	"	"	"
1000/1000II	"	"	—	"	Record	Fast-forward	"	"
700/700II	"	"	—	"	"	"	"	"
700ZXL/700ZXE	"	"	—	"	"	Cueing	"	"
ZX-9/ZX-7	"	"	—	"	"	"	"	"
LX-5/LX-3	"	"	—	"	"	Fast-forward	"	"
682ZX/681ZX/680ZX/680	"	"	—	"	"	Cueing	"	"
670ZX/660ZX	"	"	—	"	"	"	"	"
582Z/581Z	"	"	—	"	"	"	"	"
582/581/580M/580	"	"	—	"	"	"	"	"

—: Not available " : As above *: When the Record button is pressed again during recording, Rec Mute is activated.

② For models other than the Nakamichi CassetteDeck 1/2 and the Nakamichi 1000 (DAT), the serial-to-parallel converter RC-4 (sold separately) is required. Please contact your dealer.

② For system remote control of the Nakamichi models 1000, 1000II, 700, or 700II, the control cable SRC-3 is required in addition to the serial-to-parallel converter RC-4.

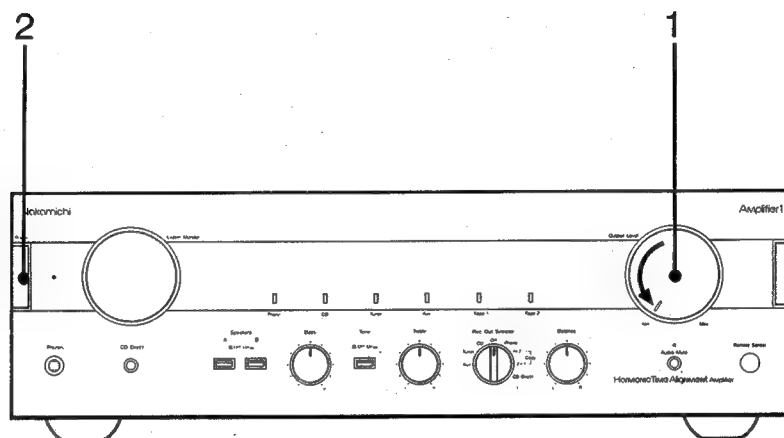
② For system remote control of a second tape deck, the control cable SRC-2 is required.

② When synchro recording in conjunction with the CDPlayer 2 is carried out, do not use the "Tape 1" terminal for system remote control.

Operation

Before Operation

1. Turning the unit on

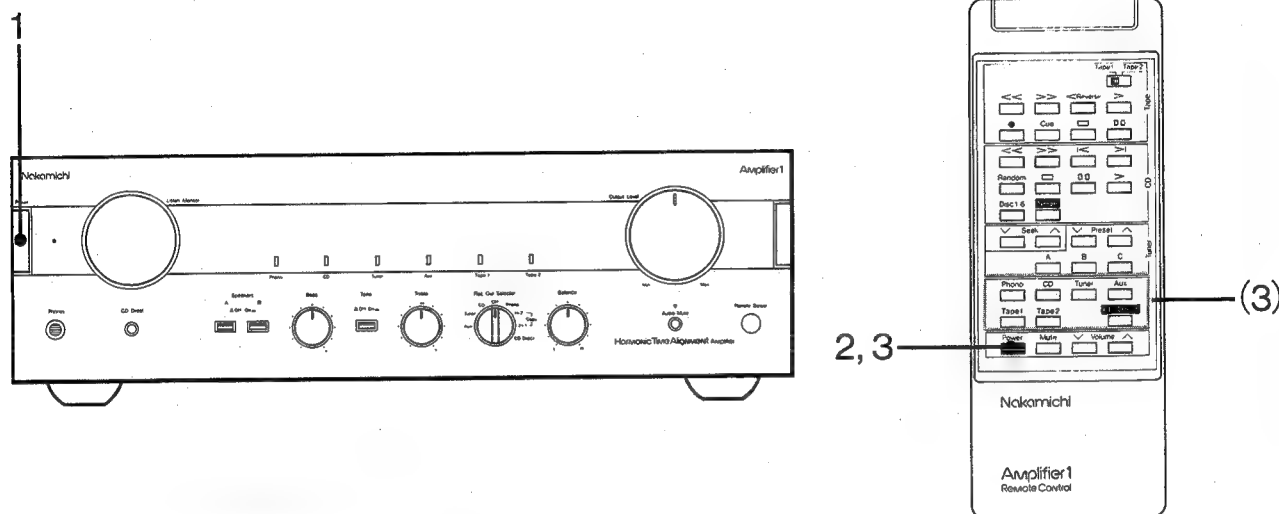


1 Turn the volume control fully down.

2 Press the **Power** switch.

After a muting interval of a few seconds (to allow the internal circuits to stabilize), the unit becomes operational.

2. Turning the Unit On and Off by Remote Control (Amplifier1)



- 1** Press the **Power** switch on the amplifier.

The unit is turned on.

- 2** Use the **Power** button on the remote control to turn the amplifier off.

When the amplifier is turned off with the Power button on the remote control, it enters the standby condition.

- 3** Press the **Power** button on the remote control, or press one of the Listen Monitor buttons or the CD Direct button.

This will turn power to the amplifier on.

⚠ In the standby condition, the amplifier cannot be turned on by pressing the Power switch or using the Listen Monitor selector on the amplifier. Use the Power button or another button on the remote control.

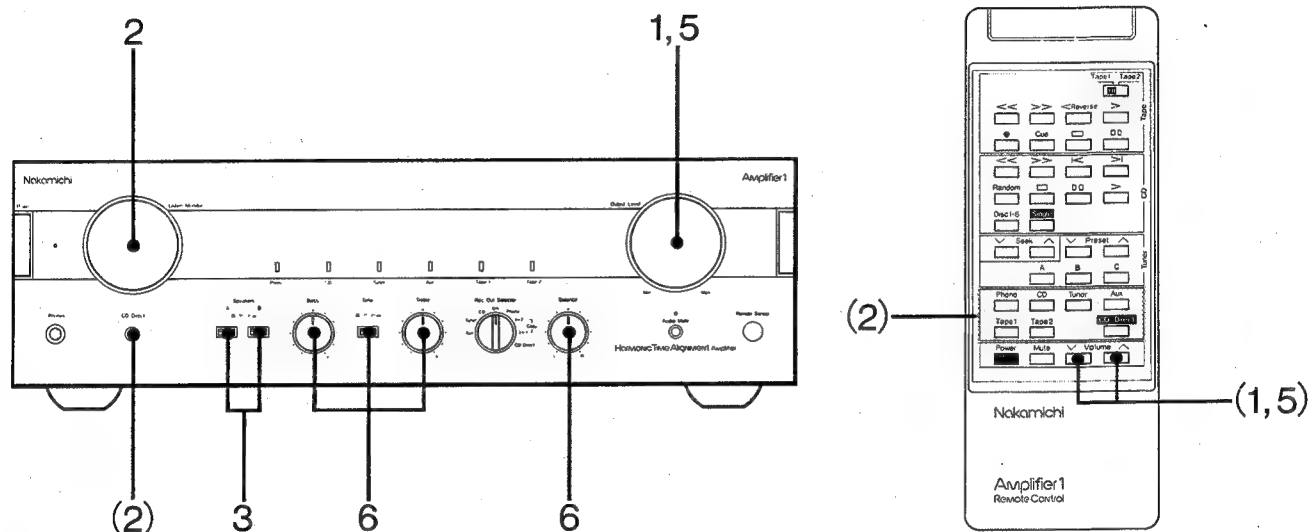
⚠ If the unit is not to be used for a long time, turn the power off by pressing the Power switch on the amplifier.

● Power indicator functions

The Power indicator on the amplifier's front panel lets you easily check the operation status of the unit.

Power indicator	Operation status
Out	Power off
Lit (orange) [Amplifier1 only]	Standby
Flashing (green)	Power on, muting interval
Lit (green)	Power on, normal operation

Listening to a Program Source



- 1 Turn the volume control fully down.
- 2 Select the desired program source.
When the Listen Monitor selector on the amplifier is turned, the program source is switched with each click. The program source can also be selected directly by pressing the corresponding button on the remote control.
- 3 Select the loudspeaker pair.
- 4 Start playback of the program source.
- 5 Adjust the volume control of the amplifier.
- 6 If required, adjust the balance and the tonal quality.
To use the tone controls, first set the Tone switch to On.

● Phono playback

To protect the loudspeakers from possible damage, always turn the volume fully down when lowering or lifting the stylus.

- ⊞ The phono input of this amplifier has an integrated subsonic filter which serves to remove low-frequency noise.
- ⊞ Before operating the cartridge type selector on the rear panel of the amplifier, always turn the volume fully down to protect the loudspeakers from possible damage. Set the cartridge type selector as shown below.

Cartridge type		Selector position
MM (moving-magnet) cartridge		MM
MC (moving-coil) cartridge	Rated output voltage 1.0 mV or more	MM
	Rated output voltage less than 1.0 mV	MC

● To listen with headphones

Set both speaker selector buttons (A and B) to Off. Connect a pair of stereo headphones (impedance 8 to 150 ohms) to the Phones jack.

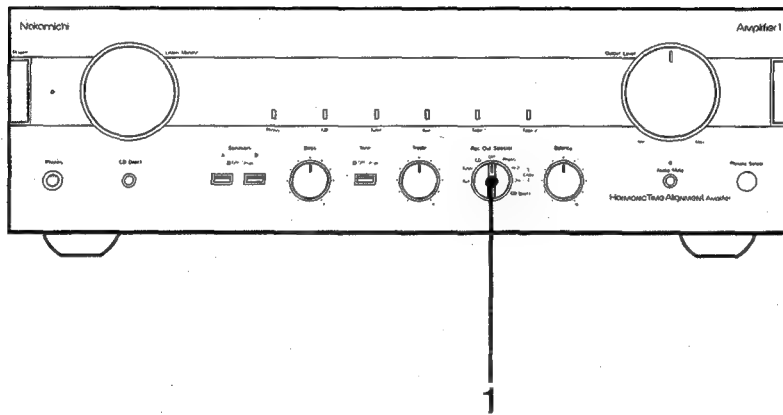
● To quickly lower the volume

Press the Audio Mute button. The Audio Mute indicator lights up and the volume is reduced to one-tenth (-20 dB). Pressing the button again restores the original volume setting (indicator goes out).

To owners of the Amplifier1 in Europe

A separate phono equalizer stage for even higher-quality reproduction of phonograph records is available as an option. This requires replacement of internal parts. Please consult your dealer.

Recording on a Tape Deck

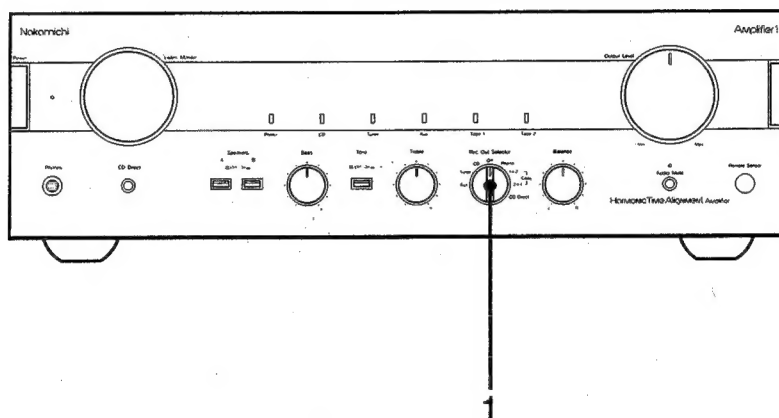


- 1 Set the Rec Out selector to the program source you wish to record.
- 2 Set the tape deck to the record mode.

➡ The signal chosen with the Rec Out selector is supplied at both sets of tape outputs (Tape 1 and Tape 2). Simultaneous recording on two tape decks is therefore possible.

Tape Dubbing

When two tape recorders are connected, tape dubbing in both directions can be carried out easily.



1 Set the Rec Out selector to "1 → 2" or "2 → 1".

2 Set the tape decks to the record and the playback mode, respectively.

● Use of the Rec Out selector and Listen Monitor selector

The Rec Out selector and Listen Monitor selector can be set independently. This makes it possible for example to listen to the signal from a tuner while recording a CD, or to perform tape dubbing with two tape decks while listening to a CD. With a three-head tape deck, monitoring is possible simply by setting the Listen Monitor selector to the position of that tape deck.

- ☞ The signal supplied to the tape recorder outputs is completely unaffected by the volume and tone control settings of the amplifier.

Troubleshooting

Please check the following points before requesting service.

Condition	Remedy
No sound.	<ul style="list-style-type: none">● Check whether all plugs are firmly inserted and all cables including speaker cables are properly connected.● Set Listen Monitor to correct position.● Protection circuits have activated. Turn down the volume control and check for short-circuits or other problems (→ p. 11).
Volume is too low.	<ul style="list-style-type: none">● Release Audio Mute button.
Left/right channels are reversed, no sound from one channel.	<ul style="list-style-type: none">● Check whether all plugs are firmly inserted and all cables including speaker cables are properly connected.● Return balance control to center position.
Bass response is deficient, stereo imaging is unstable.	<ul style="list-style-type: none">● Connect speaker cables with correct polarity.
Hum is heard during phono playback.	<ul style="list-style-type: none">● Check whether RCA-type plugs and ground cable from turntable are properly connected.● Increase distance between power cord and connecting cables or phono cartridge.● Increase distance between amplifier and turntable.
Hum is heard.	<ul style="list-style-type: none">● Insert all RCA-type plugs firmly in jacks.● Increase distance between amplifier and TV set or similar equipment.
Remote control does not operate.	<ul style="list-style-type: none">● Batteries are exhausted. Replace both batteries.● Check battery polarity.● Point remote control at sensor on amplifier.● Do not use other remote controls at the same time.● Remove obstacles between amplifier and remote control.

Specifications

For areas other than Scandinavia and Switzerland

■ Power amplifier section

Note: Unless noted otherwise, specifications are in accordance with IHF-A-202 measured from any high-level input (CD/TUNER/TAPE/AUX) to the speaker output.

	Amplifier1	Amplifier2
Continuous Average Output Power (both channels driven, 20–20,000 Hz, 0.1% THD) (DIN, both channels driven, 1 kHz, 1% THD)	80 watts per channel into 8 ohms 130 watts per channel into 4 ohms 180 watts per channel into 4 ohms 270 watts per channel into 2 ohms	50 watts per channel into 8 ohms 80 watts per channel into 4 ohms 90 watts per channel into 4 ohms 140 watts per channel into 2 ohms
Dynamic Output Power	10–50,000 Hz	10–50,000 Hz
Power Bandwidth	20–20,000 Hz +0, –0.5 dB	20–20,000 Hz +0, –0.5 dB
Frequency Response	5–80,000 Hz +0, –3 dB	5–80,000 Hz +0, –3 dB
Signal-to-Noise Ratio (A-WTD, input shorted)	Better than 105 dB re rated power Better than 83 dB (IHF-A-202)	Better than 105 dB re rated power Better than 83 dB (IHF-A-202)
Total Harmonic Distortion (8 ohms, rated power, 20 Hz–20 kHz)	0.1% or less	0.1% or less
Headphone Output (into 40 ohms)	187 mW	117 mW
Output Current Capability	28 A peak per channel	18 A peak per channel

■ Preamplifier section

Note: Unless noted otherwise, specifications are in accordance with IHF-A-202. Except for sensitivity, S/N, and tone control characteristics (which are measured to the speaker outputs), measurements are made from the specified input to Rec Out.

		Amplifier1	Amplifier2
Input sensitivity/Impedance	Phono MC	0.125 mV/100 ohms	0.125 mV/100 ohms
	MM	2.5 mV/47 kohms	2.5 mV/47 kohms
	CD/Tuner/Tape/Aux	150 mV/20 kohms	150 mV/20 kohms
Maximum input level (1 kHz)	Phono MC	9 mV	9 mV
	MM	180 mV	180 mV
Output level/Impedance	Rec Out	150 mV/1.5 kohms	150 mV/1.5 kohms
Total Harmonic Distortion (1 kHz, Rec Out, 1 V output level)	Phono MC	0.01% or less	0.01% or less
	MM	0.008% or less	0.008% or less
RIAA deviation	Phono MC/MM	30–20,000 Hz ± 0.5 dB	30–20,000 Hz ± 0.5 dB
Signal-to-Noise Ratio (to speaker output, IHF-A-202)	Phono MC	70 dB	70 dB
	MM	82 dB	82 dB
Tone Controls	Bass	20 Hz, ± 10 dB	20 Hz, ± 10 dB
	Treble	20 kHz, ± 10 dB	20 kHz, ± 10 dB

■ General

	Amplifier1	Amplifier2
Power Source	120, 230, 240 or 110/120/220/240 V AC, 50/60 Hz (according to country of sale)	120, 230, 240 or 110/120/220/240 V AC, 50/60 Hz (according to country of sale)
Power Consumption	600 W max.	370 W max.
Convenience Outlets	Switched $\times 2$, maximum capacity 200 W (total)	Switched $\times 2$, maximum capacity 150 W (total)
Dimensions*	430(W) \times 125(H) \times 360(D) mm	430(W) \times 125(H) \times 360(D) mm
Approximate Weight	15.0 kg	12.5 kg

■ Remote control unit

	Amplifier1	Amplifier2
Principle	Infrared pulse system	Infrared pulse system
Power Supply	3 V DC (1.5 V \times 2)	3 V DC (1.5 V \times 2)
Dimensions*	64(W) \times 18(H) \times 176(D) mm	64(W) \times 18(H) \times 176(D) mm
Approximate Weight	140 g (including batteries)	140 g (including batteries)

*: Dimensions do not include protruding parts. Height is the panel height.

• Specifications and design are subject to change for further improvement without notice.

For Scandinavia and Switzerland

■ Power amplifier section

Note: Unless noted otherwise, specifications are in accordance with IHF-A-202 measured from any high-level input (CD/TUNER/TAPE/AUX) to the speaker output.

	Amplifier1	Amplifier2
Continuous Average Output Power (both channels driven, 20–20,000 Hz, 0.1% THD)	80 watts per channel into 8 ohms	50 watts per channel into 8 ohms
Dynamic Output Power	180 watts per channel into 4 ohms 270 watts per channel into 2 ohms	90 watts per channel into 4 ohms 140 watts per channel into 2 ohms
Power Bandwidth	10–50,000 Hz	10–50,000 Hz
Frequency Response	20–20,000 Hz +0, –0.5 dB 5–80,000 Hz +0, –3 dB	20–20,000 Hz +0, –0.5 dB 5–80,000 Hz +0, –3 dB
Signal-to-Noise Ratio (A-WTD, input shorted)	Better than 105 dB re rated power Better than 83 dB (IHF-A-202)	Better than 105 dB re rated power Better than 83 dB (IHF-A-202)
Total Harmonic Distortion (8 ohms, rated power, 20 Hz–20 kHz)	0.1% or less	0.1% or less
Headphone Output (into 40 ohms)	187 mW	117 mW
Output Current Capability	28 A peak per channel	18 A peak per channel

■ Preamplifier section

Note: Unless noted otherwise, specifications are in accordance with IHF-A-202. Except for sensitivity, S/N, and tone control characteristics (which are measured to the speaker outputs), measurements are made from the specified input to Rec Out.

		Amplifier1	Amplifier2
Input sensitivity/Impedance	Phono MC	0.125 mV/100 ohms	0.125 mV/100 ohms
	MM	2.5 mV/47 kohms	2.5 mV/47 kohms
	CD/Tuner/Tape/Aux	150 mV/20 kohms	150 mV/20 kohms
Maximum input level (1 kHz)	Phono MC	9 mV	9 mV
	MM	180 mV	180 mV
Output level/Impedance	Rec Out	150 mV/1.5 kohms	150 mV/1.5 kohms
Total Harmonic Distortion (1 kHz, Rec Out, 1 V output level)	Phono MC	0.01% or less	0.01% or less
	MM	0.008% or less	0.008% or less
RIAA deviation	Phono MC/MM	30–20,000 Hz ± 0.5 dB	30–20,000 Hz ± 0.5 dB
Signal-to-Noise Ratio (to speaker output, IHF-A-202)	Phono MC	70 dB	70 dB
	MM	82 dB	82 dB
Tone Controls	Bass	20 Hz, ± 10 dB	20 Hz, ± 10 dB
	Treble	20 kHz, ± 10 dB	20 kHz, ± 10 dB

■ General

	Amplifier1	Amplifier2
Power Source	230 V AC, 50/60 Hz	230 V AC, 50/60 Hz
Power Consumption	400 W max.	280 W max.
Convenience Outlets	Switched $\times 2$, maximum capacity 200 W (total)	Switched $\times 2$, maximum capacity 150 W (total)
Dimensions*	430(W) \times 125(H) \times 360(D) mm	430(W) \times 125(H) \times 360(D) mm
Approximate Weight	15.0 kg	12.5 kg

■ Remote control unit

	Amplifier1	Amplifier2
Principle	Infrared pulse system	Infrared pulse system
Power Supply	3 V DC (1.5 V \times 2)	3 V DC (1.5 V \times 2)
Dimensions*	64(W) \times 18(H) \times 176(D) mm	64(W) \times 18(H) \times 176(D) mm
Approximate Weight	140 g (including batteries)	140 g (including batteries)

*: Dimensions do not include protruding parts. Height is the panel height.

• Specifications and design are subject to change for further improvement without notice.